

***Innovating for Better Environmental Results:  
A Strategy to Guide the Next Generation of Innovation at EPA***

**Winter 2002 Progress Report**

**Strengthen Innovation Partnership With States and Tribes**

**EPA and States to Discuss Improved Methodologies for Comparing Environmental Statutes -**

Sparked by the Massachusetts Functional Equivalent ECOS Project, EPA has agreed to consider a national discussion to explore approaching functional equivalence comparisons between state and federal environmental regulations in a more holistic fashion. Under current practice, state and federal regulations for a particular environmental program (e.g., RCRA), are analyzed using a line by line comparison. If a single line item of a state law is deemed to be less stringent than the federal counterpart, the entire state regulation is viewed to be non-equivalent, thereby defaulting to the federal regulation. An unintended consequence of this approach is that in some cases state regulations, which are actually more protective overall are deemed to be non-equivalent because of a single line item. The State of Massachusetts contends that functional equivalence should be determined considering the overall requirements of the regulation. ASTSWMO (Association of State and Territorial Solid Waste Management Officials) has been assisting OSW and OECA by assessing the interest of the states in this topic. Currently, 11 states have expressed interest.

**Focus on Priority Problems**

**Reduce Greenhouse Gases**

**\$3.5 Million Awarded for Research on Global Climate Change** - EPA has awarded research grants totaling more than \$3.5 million to four universities to study the potential consequences of global climate change on U.S. ecosystems and their living organisms. The grants were awarded through Science to Achieve Results (STAR), an EPA program that funds research in environmental science and engineering. Grant recipients at Colorado State University will investigate whether changes in climate and ultraviolet radiation (UV) increase assimilation of metal contaminants by aquatic organisms in Rocky Mountain streams. Lehigh University scientists will study the Lehigh River watershed in northeastern Pennsylvania to determine how land and river properties interact with solar radiation and how organisms adapt to increased UV exposure. By studying the Ontonagon River in northern Michigan, University of Notre Dame scientists will investigate how global change affects aquatic ecosystems, with a focus on future risk strategies to reduce possible damage to aquatic ecosystems. Texas Tech researchers will study the effects that global change could have on playa lake systems and how agricultural producers can modify land management practices to mitigate these effects.

**Multi-stakeholder Summit to Identify Priorities for Air Quality in the Pacific Northwest, Alaska and Canada** - As part of the Northwest Collaborative Air Priorities Project (NW CAPP), EPA Region 10 and Portland State University are co-sponsoring a Northwest Air Summit scheduled for June 3-5 in Seattle, Washington. This three-day event has been designed to transform air quality protection from a “government in charge” model to that of “shared leadership” among government, businesses, public interest groups, Tribes and academia. It will bring together 300 people from the Pacific Northwest, Alaska and Canada in a design aimed to:

- engage participants in such a way that they are willing to take the necessary actions to reduce risk;
- expose disparate stakeholders to the same information and work together to develop 5 priorities for action;
- eliminate duplication of effort among participants; and
- prioritize actions.

This summit is particularly important since demands related to air quality issues are larger than available resources.

**Auto Manufacturers and Heating and Air Conditioning Industries Benefit From New ENERGY STAR Tools** - EPA’s ENERGY STAR program has released two tools to assist industry in better managing, and thereby reducing, overall energy consumption. First ENERGY STAR released an updated heating, ventilating and air conditioning (HVAC) specification that guides manufacturers in developing products that better address peak loads from central air conditioners and heat pumps – allowing them to display the ENERGY STAR label. ENERGY STAR has also released a plant energy performance indicator for the automobile manufacturing industry. This tool is built upon the success of a performance rating system for facilities such as office buildings, schools, hospitals, supermarkets, and hotels. This tool allows companies to benchmark the energy performance of their facilities, enabling them to judge whether energy saving actions are having their desired effect. On a related note, ENERGY STAR partnered with the consumer electronics industry to promote purchases of energy efficient products during the holiday shopping season. This effort culminated with the appearance of Administrator Whitman on the Today Show to showcase the wide variety of ENERGY STAR products.

**Public Private Partnership Launched to Reduce Greenhouse Gas Emissions** - The Department of Energy, on behalf of the Administration, launched the President's "Climate VISION" (Voluntary Innovative Sector Initiatives: Opportunities Now), a voluntary, public-private partnership to pursue cost-effective initiatives that will reduce the projected growth in America's greenhouse gas emissions. Climate VISION directly responds to President Bush's announcement in February 2002 to address the long-term challenge of global climate change. As part of this strategy, he committed to reducing America's greenhouse gas intensity - the ratio of emissions to economic output - by 18 percent during the next decade, and challenged American businesses and industries to undertake broader efforts to help meet that goal. At the launch, EPA Administrator Whitman and other federal agency leaders joined business and industry leaders participating in Climate VISION in recognizing the significant

initiatives that major, energy-intensive sectors of the American economy are undertaking to meet the President's challenge.

### **New Voluntary Program to Reduce Greenhouse Gas Emissions and Improve Air Quality -**

EPA and partners from leading multi-national corporations have announced a new voluntary effort called SmartWay Transport. The charter members have agreed to work with EPA to develop performance measures or goals to improve air quality, reduce greenhouse gas emissions, save fuel, and protect public health. The goal is to reduce air pollution and greenhouse gas emissions from ground freight carriers such as trucks and locomotives. By 2012 this initiative aims to reduce as much as 18 million metric tons of carbon equivalent, and up to 200,000 tons of nitrogen oxides annually. These reductions will create fuel savings of up to 150 million barrels of oil annually. Eventually participating corporations will earn SmartWay labels that will distinguish them as having made significant commitments to reducing emissions.

### **Reduce Smog**

**“Green” Reconstruction of Seven World Trade Center** – EPA Region 2 partnered with Silverstein Associates and New York State to support a demonstration project which could pioneer the "green" rebuilding of lower Manhattan. On February 4th, Jane Kenny signed a Memorandum of Understanding (MOU) with Silverstein Associates, the owners of Seven World Trade Center, supporting efforts to use less polluting construction equipment in its reconstruction. The MOU is an agreement to conduct a diesel emission reduction project on site to reduce emissions of nitrogen oxides, sulfur oxides, hydrocarbons and particulate matter. All diesel-powered equipment will use ultra-low sulfur diesel fuel and some equipment will be retrofitted with advanced pollution control technologies to further reduce emissions of harmful pollution. Other signatories to the MOU include the New York State DEC, the Northeast States Clean Air Foundation and the Natural Resources Defense Council.

**First Hydrogen Fuel Cell Certificate Issued** - EPA announced the first certification for fuel economy and emissions of a U.S. hydrogen fuel cell zero-emission vehicle on February 11. This comes shortly after a Presidential commitment to further the progress of hydrogen fuel cells as a way to make the air significantly cleaner and our country less dependent on foreign sources of energy. EPA is responsible for certifying that each new motor vehicle sold in the U.S. complies with all emission standards. Engineers and scientists at EPA's National Vehicle and Fuel Emissions Laboratory in Ann Arbor, Mich., are applying their unique technical expertise to selected fuel-cell-related challenges. EPA's Ann Arbor Lab is the first federal facility capable of testing and certifying a fuel cell vehicle for emissions and fuel economy. As a result, the 2003 Honda FCX was the first to be certified as a U.S. hydrogen fuel cell zero-emission vehicle.

### **Restore and Maintain Water Quality**

**EPA Releases Water Quality Trading Policy** - EPA has released a new Water Quality Trading Policy to cut industrial, municipal and agricultural discharges into the nation's waterways. The trading

policy seeks to support and encourage states and Tribes to develop and implement water quality trading programs that use Clean Water Act requirements in the most flexible ways and reduce the cost of improving and maintaining the quality of the nation's waters. EPA also pledged more than \$800,000 in fiscal year 2002 funding along with technical support for 11 trading projects around the country.

**New Approach for Controlling Runoff from Concentrated Animal Feeding Lots** - EPA is working with the agricultural community to control water pollution from the nation's largest livestock operations while keeping American agriculture viable. Under a new final rule issued in December, all large Concentrated Animal Feeding Operations (CAFOs) will be required to obtain permits that will ensure they protect America's waters from wastewater and manure. The rule replaces 25-year old technology requirements and permitting regulations that did not address today's environmental needs and did not keep pace with growth in the industry. It will control runoff from agricultural feeding operations, preventing billions of pounds of pollutants from entering America's waters. It also gives states significant flexibility to find geographically appropriate means of implementing the requirements.

### **Close the Water Infrastructure Gap**

**Innovation Highlighted at EPA's First National Conference on Water Infrastructure** - On January 31, 2003, EPA hosted a national conference for experts to exchange information and views on meeting future challenges in water infrastructure management and investment. Assuming no growth in revenues, the total need for drinking water and wastewater infrastructure in both capital and operations and maintenance exceeds \$540 billion over 20 years. The one-day forum focused on the growing needs for infrastructure replacement, improvement and expansion, and the use of innovative methods to ensure maximum efficiency in water resources and water infrastructure management and investment.

### **Expand Brownfields**

**New Action Agenda Announced for Federal Brownfields Redevelopment Partnership** - Speaking before the "Brownfields 2002 Investing in the Future" Conference in November, EPA Administrator Christie Whitman announced a new Brownfields Federal Partnership Action Agenda for EPA and 21 other federal agencies and departments. The Agenda makes over 100 commitments for cooperative work to help communities more effectively prevent, clean up and reuse Brownfields. The action agenda is one piece of a comprehensive effort by the Bush Administration to address Brownfields cleanup and revitalization efforts.

**First "Ready for Reuse" Determination for a Federal Facility** - In a major step to promote the reuse potential of contaminated industrial properties nationwide, EPA and the Texas Commission on Environmental Quality (TCEQ) issued a "Ready For Reuse" technical determination to the U.S. Air Force for the Brooks City-Base in San Antonio. The technical determination is the first of its kind to be issued in Texas and for a federal facility nationwide. With this technical determination, the TCEQ and EPA agree that the Air Force has successfully completed the cleanup of its property under The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) hazardous

waste cleanup program. The technical determination verifies that environmental conditions on this property are protective of its current use and anticipated future use as a technology and business park. It allows a potential buyer to make informed purchasing or development decisions based on information verified by EPA and the relevant state environmental regulatory agency.

### **Reduce Impact From Agricultural Production**

**Pesticide Environmental Stewardship Program Selects Champions** - EPA's Pesticide Environmental Stewardship Program (PESP) has selected 18 program members as "PESP Champions" of 2002. PESP is a voluntary program that forms partnerships with pesticide users to reduce the health and environmental risks associated with pesticide use and implement pollution prevention strategies. The Champions were selected based on their outstanding efforts promoting integrated pest management (IPM) and toward advancing pollution prevention. PESP was established in 1994 with 10 charter partners; today there are more than 130 members nationwide.

## **Diversify Environmental Protection Tools and Approaches**

### **Information**

**Innovative Approaches for Industrial Waste Management to Reach More Users** - The Office of Solid Waste joined forces with the Association of State and Territorial Solid Waste Management Officials (ASTSWMO) to develop and distribute a guide and interactive CD-ROM identifying innovative tools and approaches to managing industrial waste. Based on the philosophy that sound waste management should include protection of all media (e.g., groundwater, surface water and air), interactive models and an Internet-based mapping tool allow the user to consider multiple, complicated factors simultaneously. For example, the air tool evaluates the need to control volatile airborne emissions at an industrial waste management unit while the groundwater tool addresses the need for an appropriate liner system design to ensure protection of the groundwater. In addition, an Internet-based mapping tool allows a user to consider important geologic conditions when siting a new industrial waste unit. Lastly, fact sheets, developed by the Agency for Toxic Substances and Disease Registry (ATSDR), provide a better understanding of why specific chemicals may be of concern. The Guide for Industrial Waste Management and CD-ROM are scheduled to be announced at the next ASTSWMO meeting on April 16 in Cincinnati.

**Update on Sustainable Futures Initiative** - In December 2002, EPA issued a Federal Register Notice officially launching the Sustainable Futures Initiative. Under the Sustainable Futures Initiative, EPA provides powerful chemical risk screening tools (the P2 Framework and PBT Profiler) to the chemical industry. Industry uses these tools during chemical research and development to screen product alternatives for risk-related considerations - - allowing companies to commercialize inherently safer new chemicals, to reformulate existing product lines to reduce risk, and to screen waste streams for toxicity. Companies can identify, and engineer around, problematic chemicals so early in the

research and development process that substitution to lower hazard/lower risk alternative chemicals/processes is cost effective and feasible. In doing so, companies have reduced product development costs by 13% - 100%. In January, OPPTS partnered with Region 8 to host the first Sustainable Futures training workshop where both domestic and international chemical companies participated.

### **Environmental Management Systems (EMS)**

**Promoting Environmental Stewardship at Outdoor Shooting Ranges** - EPA Region 2, in partnership with shooting sports organizations and the shooting range industry, has created an outreach program aimed at range owners and their customers to improve environmentally-friendly practices at outdoor shooting ranges. The partnership created a "Best Management Practices for Lead at Outdoor Ranges" that calls for reclaiming lead and recycling it into new shot and bullets. This action addresses concerns that accumulated lead from shot and bullets may pose a risk to the environment and human health. It also reduces the amount of virgin lead that must be mined. The manual has received widespread accolades: a European shooting trade association has published a handbook on the same topic based on EPA's manual, which holds up EPA's publication as a "model for other countries." Building upon this effort, on January 17, 2003, the Izaak Walton League became the first organization to sign a formal Memorandum of Understanding with EPA to promote environmental stewardship more comprehensively at over 100 of its outdoor shooting ranges. The League will work with EPA and the National Association of Shooting Ranges to develop a sample Environmental Stewardship Plan that each of the League's ranges could modify and adopt. EPA's efforts to promote environmental practices at shooting ranges throughout the nation complement the Agency's Resource Conservation Challenge, which calls on all Americans to reduce, reuse and recycle goods to decrease the use of new natural resources.

### **Technology**

**EPA to Total More Than \$11 million in Research Grants on Nanotechnology** - EPA is a part of a government-wide effort pursuing a highly practical goal: "green nanotechnology" or finding ways to apply fast-developing nanotechnology to create a cleaner environment. Nanotechnology operates at the level of atoms and molecules and has the potential to become a new kid on the environmental protection block. Potentially useful applications of this supertech system include revolutionary advances in pollution prevention, sensors, and waste treatment and remediation. EPA's Science to Achieve Results (STAR) grant program has already funded 16 new research projects at leading universities totaling nearly \$6 million to study this emerging technology. A second competition was issued, and ORD is poised to award another \$5 million in nanotechnology research grants. The promises of nanotechnology leading to great advances in environmental protection also bring questions of potential environmental concerns. A third competition is being issued to address the environmental risks associated with manufactured nanoparticles.

## **Results-based Performance Goals and Measures**

**Strategic and Smart Enforcement and Compliance Assurance Shows Results** - Compliance assurance and enforcement results for Fiscal Year 2002 show that millions of pounds of harmful pollutants will be reduced, cleaned up, or treated, thousands of acres of wetlands will be restored, and cleaner air, water and soil will be achieved for the American people. For the first time, EPA is reporting on a wider range of results achieved through its enforcement efforts, including data on groundwater, wetlands, and drinking water. In addition to estimating the pounds of pollution to be reduced (261 million) and pounds of contaminated soil to be treated (513 million) as in previous years, EPA is now measuring gallons of contaminated groundwater to be treated (2.8 billion gallons), acres of wetlands that will be restored (40,000), and the number of people served by drinking water systems that will be brought into compliance (3.1 million) as a result of enforcement activity. These measures provide a more thorough and accurate profile of the environmental protection results achieved through EPA's program to enforce the nations environmental laws. EPA also reported a notable 26 percent increase in the number of companies self disclosing environmental violations. In FY2002, EPA saw 500 companies self-disclosing violations in comparison to 397 in FY2001.

## **Smart Growth**

**Award Recognizes Innovative Approaches to Smart Growth** - In November, EPA announced four winners of the first National Award for Smart Growth Achievement. The award recognizes innovative approaches and actions taken by state, local and regional governments to achieve smart growth. Each award recipient incorporated principles of smart growth to create places that respect community culture and the environment, foster economic development and enhance quality of life. Winners and the award categories were as follows: Arlington County, Virginia for Overall Excellence; Breckenridge Planning Department, Colorado for Built Projects; the City County Association of San Mateo County, California for Policies and Regulations; and the State of Massachusetts Executive Office of Environmental Affairs for Community Outreach and Education.

## **Foster a More Innovative Culture and Organizational Systems**

**New Notable Achievement Award Incorporating Innovation** - To recognize and encourage innovation throughout Office of Solid Waste and Emergency Response (OSWER) and the regional waste and clean-up programs, OSWER has established the AA Priorities Award. The AA Priorities Award is designed to recognize an individual or a team that played a significant role in advancing one of OSWER's priorities and did so in an innovative manner. Award recipient(s) will be announced this Spring.

**Region 6 Demonstrates Commitment to Innovation** - Region 6 is developing a regional innovation strategy which will address the Administrator's Priorities, the EPA Innovation Strategy, foster new ideas, and show employees they can make a difference. The Region 6 Innovation Strategy is testing a

decentralized approach where team structures are not as stringently based on a particular media or by division. The hope is that this new team structure will provide staff opportunities to more actively help develop innovative solutions to environmental problems. Other important elements to improve creativity and motivate innovative thought and action include timely feedback from managers on innovative concepts and ideas, and rewards and incentives for ideas for both internal and external participants.

## **Other**

**New Campaign Urges Americans to Reuse or Recycle Old Electronics Equipment** - EPA launched a new campaign to encourage Americans to reuse or recycle their used electronics during the 2003 International Consumer Electronics Show. The Plug-In To Recycling Campaign, a partnership of Best Buy, AT&T Wireless, Sony, Panasonic, Dell, Sharp, Recycle America (a wholly owned subsidiary of Waste Management, Inc.), Envirocycle, Inc., and ntxcycle is intended to raise Americans' awareness of the value of reusing and recycling electronics and to provide them with increased opportunities to do so across the country. This campaign is one of several new EPA efforts under the Agency's Resource Conservation Challenge, which seeks to increase the national recycling rate from 30 to 35 percent and cut the generation of 30 harmful chemicals by 2005.

**EPA Announces Results from Regional Recycling of Electronics Equipment** - In October, EPA and state environmental agencies in the U.S. Mid-Atlantic region announced the results of the "eCycling" pilot project, the nation's first collaboration between multi-state government agencies and the electronics industry to offer citizens and small businesses opportunities to reuse and recycle old computer equipment, televisions and other electronic products. This project evaluates different methods of collecting end-of-life electronics, compiles data about the costs of collecting, transporting and processing electronics and helps define the roles and responsibilities of government, consumers, electronics manufacturers, retailers, and recyclers in recycling. Results for the first year show that states, manufacturers and members of the Electronic Industries Alliance collected over 2,600 tons of used electronics from Mid-Atlantic residents, and prevented over 22,000 cathode ray tubes (CRTs) in televisions from entering the region's landfills and incinerators.

**Grassroots Sustainability Conference gets Federal Support** - The Federal Network For Sustainability (FNS) and EPA Region 10 are co-sponsoring the upcoming Northwest Sustainability Forum to be held in Portland, Oregon May 29-31, 2003. The 130+ panels and workshops at this grassroots event will promote dialogue that defines, encourages and facilitates progress towards sustainability in the Northwest – promoting sustainable products and services, creating employment in sustainable industries, revitalizing communities, and restoring natural ecosystems. EPA is helping to design the track "Being Sustainable in a Tough Economy", which has particular relevance to the current economic situation in Oregon and throughout the northwest. Through presentations by business representatives and others, participants will walk away with examples of how sustainability is a good business practice even during an economic downturn.



